REMARKS

Claims 1-31 are rejected in the Office Action. No claim amendments are offered with this amendment. Claims 1-31 remain pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejection in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-22 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,777,053 (the McBain reference). According to the Office Action, the McBain reference shows preferring Craynor CN 963 as a polyester urethane acrylate gel coat resin. The Office Action then cites the Strauss reference (U.S. Patent 6,617,033) to show that Craynor CN 963 is made from a polyester, an aliphatic polyisocyanate, and a hydroxyalkyl acrylate. Applicants respectfully traverse the rejection and request reconsideration.

The structure of Craynor CN 963 as given in the Strauss reference is different from the structure of the gel coat resin recited in claim 1. The differences are apparent when the method of Strauss for making the resin is compared to the structure recited in the current claim 1 and in the method claim 22.

Teachings of Strauss (Craynor CN 963)

At column 7, Strauss states "an example of a preferred polyester urethane acrylate is Craynor CN 963...." Synthesis of preferred resins, such as Craynor CN 963, is described in the paragraph bridging columns 6 and 7.

In a first step, a polyester intermediate A is made by reacting aliphatic dicarboxylic acids or anhydrides with glycols according to methods well known in the art (column 6, lines 48-51).

Suitable dicarboxylic acids and glycols are given in lines 52-67 of column 6. For purposes of illustration, the polyester intermediate A of Strauss is to be compared to (a) of the current claims (a hydroxyl terminated oligoester).

In a second step, Strauss reacts the polyester intermediate A with an aliphatic polyisocyanate B. For purposes of illustration, the aliphatic polyisocyanate of Strauss is to be compared with component (b) recited in claim 1 (a diisocyanate). An isocyanate terminated polyurethane prepolymer B – A - B is formed (column 7, lines 9-14).

In a third step, Strauss calls for reacting the isocyanate terminated polyurethane prepolymer B – A – B with a hydroxyalkyl acrylate C to form a "saturated polyester urethane containing an acrylate" at the terminal positions of the chain. Suitable acrylates are described at column 7, lines 18-21. For purposes of illustration, the hydroxyalkyl acrylate of Strauss can be compared to component (c) recited in claim 1 (a hydroxyalkyl (meth)acrylate).

The reaction of component "A" (the polyester intermediate) with component "B" (the aliphatic polyisocyanate) can be written as

$$A + B \rightarrow B - A - B \qquad (1)$$

Formula 1 shows that dihydroxyl functional A reacts with the isocyanate functional B, and the resulting structure terminates in B, since the ratio of isocyanate to hydroxyl is such to provide an isocyanate terminated prepolymer (column 7, line 14). Upon reaction of the prepolymer with the hydroxyalkyl acrylate of Strauss (component "C"), it is seen that the resulting structure is given according to

$$B - A - B + C \rightarrow C - B - A - B - C \qquad (2)$$

as the hydroxyl of component C reacts with the terminal isocyanate groups of B – A – B. That is, Strauss teaches first forming an isocyanate functional prepolymer by reacting out all of the

polyester and polyisocyanate to form a structure B – A – B, and then, after all of the hydroxyl groups of the polyester have reacted, adding a hydroxyl functional hydroxyalkyl acrylate (C) and reacting it with the prepolymer to form a structure given in Formula 2.

CURRENT CLAIMS

In contrast to and in distinction from the teachings of the Strauss reference described above, the current claims recite resins with different structures than those given above, and methods for making the resins that are patentably distinct over the methods described above and disclosed in the Strauss reference.

First, the language of claim 1 recites that the gel coat resin contains reaction products of a reaction mixture comprising components (a) (a hydroxy terminated oligoester), (b) (a diisocyanate), and (c) (a hydroxyalkyl (meth)acrylate). That is to say, the gel coat resin of claim 1 is formed when all three components are present in a reaction mixture. The resulting structure of the resin is different from that given in the Strauss reference.

A clear difference in the current claims here is the presence of component C in the reaction mixture before all of components A and B have reacted. The consequence is that the reaction mixture will contain some species that are reaction products of the isocyanate compound with the hydroxyalkyl acrylate, designated as C – B - C. Such a reaction product is not possible to be formed in the method disclosed in the Strauss reference.

The specification clearly points out the difference in structure. For example, at paragraph 16 and 17:

> "In a preferred embodiment, the resin of the gel coat is a reaction product of (a) an oligoester of weight average molecular weight about 200 to about 4000, (b) (a diisocyanate), and (c) (a hydroxyalkyl (meth)acrylate)...A urethane-acrylate gel coat resin of the present invention has an idealized structure (1)...

C - B - A - B - C (1)

> A urethane acrylate gel coat resin of the present invention is a reaction product of A, B, and C, thus other reaction species are generally present in addition to a resin of idealized structure (1)."

Emphasis added. The method of making the resin of the invention is described for example, paragraph 34:

> "The oligoester...is blended with the hydroxyalkyl (meth)acrylate, followed by addition of the diisocyanate. The resulting reaction leads to a mixture of products, including a species having the idealized structure (1)."

The teachings in the specification thus distinguish the resin made according to the invention from that discussed in the Strauss reference, and are fully compatible with and support the compositions and method claims that are now subject to rejection over the Strauss reference.

For the reasons discussed above, the resin recited in claims 1-22 is different from that in the cited references. Accordingly, Applicant's respectfully request that the rejection of claims 1-22 as anticipated be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

Claims 23-31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,777,053 (the McBain reference). The Office Action states McBain discloses the gel coat of the claims, but Strauss differs from the claims by showing that Craynor CN 963 is made by first reacting polyester with a diisocyanate before reacting with the hydroxyalkyl acrylate. The Office Action then states that it would have been obvious to one of skill in the art to mix the polyester and acrylate before adding the diisocyanate because both methods produce the same product and the method involves one less reaction step. Applicants respectfully traverse the rejection and request reconsideration.

As discussed above, the method recited in claim 23 leads to reaction products that are different from those disclosed in the cited references. Although the method of the claims may involve "one less reaction step", such would not be motivation to modify Strauss, since the modified method would lead to different reaction products than what Strauss teaches are preferred. For these reasons, Applicants respectfully request that the rejection of claims 23-31 as obvious in light of the cited references be withdrawn.

CONCLUSION

For the reasons discussed above, Applicants believe claims 1-31 are in an allowable condition and respectfully request an early notice of allowance. The Examiner is invited to telephone the undersigned if that would be helpful to resolving any issues.

Respectfully submitted,

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